Sub D20

235. (New) A vector construct comprising a promoter operably linked to an unpaired splice donor sequence wherein said construct does not contain a poly-adenylation site operably linked to said promoter, wherein said construct does not contain a targeting sequence, and wherein there is no selectable marker between the transcriptional regulatory sequence and the splice donor sequence.

236. (New) A vector construct comprising a transcriptional regulatory sequence operably linked to an exon, said exon defined at the 3' end by an unpaired splice donor sequence, wherein said construct does not contain a poly-adenylation site operably linked to said transcriptional regulatory sequence, wherein said construct does not contain a targeting sequence, and wherein said exon does not contain a selectable marker.

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237. (New) A vector construct comprising a promoter operably linked to an exon, said exon defined at the 3' and by an unpaired splice donor sequence, wherein said construct does not contain a poly-adenylation site operably linked to said promoter, wherein said construct does not contain a targeting sequence, and wherein said exon does not contain a selectable marker.

238. (New) A vector construct comprising a transcriptional regulatory sequence operably linked to an unpaired splice donor sequence wherein said construct does not contain a poly-adenylation site operably linked to said transcriptional regulatory

sequence, wherein said construct does not contain a targeting sequence, and wherein there is no internal ribosome entry site between the transcriptional regulatory sequence and the splice donor sequence.

239. (New) A vector construct comprising a promoter operably linked to an unpaired splice donor sequence wherein said construct does not contain a poly-adenylation site operably linked to said promoter, wherein said construct does not contain a targeting sequence, and wherein there is no internal ribosome entry site between the transcriptional regulatory sequence and the splice donor sequence.

240. (New) A vector construct comprising a transcriptional regulatory sequence operably linked to an exon, said exon defined at the 3' end by an unpaired splice donor sequence, wherein said construct does not contain a poly-adenylation site operably linked to said transcriptional regulatory sequence, wherein said construct does not contain a targeting sequence, and wherein said exon does not contain an internal ribosome entry site.

241. (New) A vector construct comprising a promoter operably linked to an exon, said exon defined at the 3' and by an unpaired splice donor sequence, wherein said construct does not contain a poly-adenylation site operably linked to said promoter, wherein said construct does not contain a targeting sequence, and wherein said exon does not contain an internal ribosome entry site.

242. (New) The vector construct of any of claims 234-241 wherein said vector construct is a retrovirus vector construct.

243. (New) A vector construct comprising a promoter operably linked to an exon defined at the 3' end by an unpaired splice donor sequence, wherein said construct does not contain a poly-adenylation site operably linked to said promoter, wherein said construct does not contain a targeting sequence, wherein said exon is derived from a naturally-occurring eukaryotic sequence, does not encode antibiotic resistance activity, and is not a reporter gene, and wherein said splice donor sequence is derived from a naturally-occurring eukaryotic splice donor sequence.

244. (New) A vector construct comprising a promoter operably linked to an exon defined at the 3' end by an unpaired splice donor sequence, wherein said construct does not contain a poly-adenylation site operably linked to said promoter, wherein said construct does not contain a targeting sequence, wherein said exon is derived from a naturally-occurring eukaryotic sequence, does not encode antibiotic resistance activity, and is not a reporter gene, and wherein said splice donor sequence is derived from a naturally-occurring eukaryotic splice donor sequence, said vector construct further comprising a marker sequence operably linked to a promoter other than the promoter operably linked to said exon.

245. (New) A retrovirus vector construct comprising a first and second retrovirus long terminal repeat sequence, a eukaryotic promoter operably linked to an

exon, said exon defined at the 3' end by an unpaired splice donor sequence, wherein said exon is derived from a naturally-occurring eukaryotic sequence, does not encode antibiotic resistance activity, or is not a reporter gene, wherein said splice donor sequence is derived from a naturally-occurring eukaryotic gene, and wherein the construct does not contain a poly-adenylation site operably linked to said promoter.

246. (New) A retrovirus vector construct comprising a first and second retrovirus long terminal repeat sequence, a eukaryotic promoter operably linked to an exon, said exon defined at the 3' end by an unpaired splice donor sequence, wherein said exon is derived from a naturally-occurring eukaryotic sequence, does not encode antibiotic resistance activity, and is not a reporter gene, wherein said splice donor sequence is derived from a naturally-occurring eukaryotic gene, and wherein the construct does not contain a poly-adenylation site operably linked to said promoter, wherein the promoter, exon, and splice donor sequence are present in the vector construct between the long terminal repeat sequences in opposite orientation to the long terminal repeat sequences.

247. (New) A vector construct comprising a promoter operably linked to an exon defined at the 3' end by an unpaired splice donor sequence, wherein said construct does not contain a poly-adenylation site operably linked to said promoter, wherein said construct does not contain a targeting sequence, and wherein said exon is derived from a naturally-occurring eukaryotic sequence, does not encode antibiotic resistance activity, and is not a reporter gene.

Sub D21

248. (New) A vector construct comprising a promoter operably linked to an exon defined at the 3' end by an unpaired splice donor sequence, wherein said construct does not contain a poly-adenylation site operably linked to said promoter, wherein said construct does not contain a targeting sequence, and wherein said exon is derived from a naturally-occurring eukaryotic sequence, does not encode antibiotic resistance activity, and is not a reporter gene, said vector construct further comprising a marker sequence operably linked to a promoter other than the promoter operably linked to said exon.

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249. (New) A retrovirus vector construct comprising a first and second retrovirus long terminal repeat sequence, a eukaryotic promoter operably linked to an exon, said exon defined at the 3' end by an unpaired splice donor sequence, wherein said exon is derived from a naturally-occurring eukaryotic sequence, does not encode antibiotic resistance activity, or is not a reporter gene, and wherein the construct does not contain a poly-adenylation site operably linked to said promoter.

250. (New) A retrovirus vector construct comprising a first and second retrovirus long terminal repeat sequence, a eukaryotic promoter operably linked to an exon, said exon defined at the 3' end by an unpaired splice donor sequence, wherein said exon is derived from a naturally-occurring eukaryotic sequence, does not encode antibiotic resistance activity, and is not a reporter gene, wherein the construct does not contain a poly-adenylation site operably linked to said promoter, and wherein the

promoter, exon, and splice donor sequence are present in the vector construct between the long terminal repeat sequences in opposite orientation to the long terminal repeat sequences.

251. (New) A method of gene trapping comprising introducing the vector construct of any one of claims 234-241 and 243-250 into an isolated eukaryotic cell.

252. (New) A method of gene trapping comprising introducing the vector construct of claim 242 into an isolated eukaryotic cell.

253. (New) A method of generating a library of eukaryotic cells comprising introducing a vector according to any one of claims 234-241 and 243-250 into eukaryotic cells to produce said library.

254. (New) A method of generating a library of eukaryotic cells comprising introducing a vector according to claim 242 into eukaryotic cells to produce said library.

255. (New) A method for activating expression of an endogenous gene in an isolated cell comprising introducing the vector construct of any one of claims 234-241 and 243-250 into said cell to activate expression of said gene.

256. (New) A method for activating expression of an endogenous gene in an isolated cell comprising introducing the vector construct of claim 242 into said cell to activate expression of said gene.

257. (New) A method to activate expression of a gene in an isolated eukaryotic cell comprising introducing a vector construct into said cell, wherein said construct comprises a promoter operably linked to an exon defined at the 3' end by an unpaired splice donor sequence, wherein said construct does not contain a targeting sequence, wherein said exon is derived from a naturally-occurring eukaryotic sequence, does not encode antibiotic resistance activity, and is not a reporter gene, wherein said splice donor sequence is derived from a naturally-occurring eukaryotic splice donor sequence, wherein the vector construct is incorporated into the genome of said eukaryotic cell by non-homologous recombination and wherein said splice donor sequence is spliced to a splice acceptor sequence in said activated gene in said isolated eukaryotic cell.

258. (New) A method to activate expression of a gene in an isolated eukaryotic cell comprising introducing a vector construct into said cell, wherein said construct comprises a promoter operably linked to an exon defined at the 3' end by an unpaired splice donor sequence, wherein said construct does not contain a targeting sequence, wherein said exon is derived from a naturally-occurring eukaryotic sequence, does not encode antibiotic resistance activity, and is not a reporter gene, wherein the vector construct is incorporated into the genome of said eukaryotic cell by non-